

CLAIMS

What is claimed is:

1. A method for preventing acrylamide formation in a food product that is heat-treated, which method comprises blocking conversion of glycerol into acrylamide.
2. The method according to claim 1, that comprises blocking acrylic acid transformation into acrylamide.
3. The method according to claim 2, that comprises eliminating free amino acids.
4. The method according to claim 3, wherein said amino acids are basic amino acids and/or amidated amino acids.
5. The method according to claim 2, wherein said free amino acids are eliminated by contacting with a silica gel or a ion exchange resin.
6. The method according to claim 1, further comprising blocking glycerol transformation into acrolein.
7. The method according to claim 6, wherein glycerol transformation into acrolein is blocked by trapping glycerol on activated carbon or silica derivatives.
8. The method according to claim 1 further comprising blocking glycerol formation and/or acrolein transformation into acrylic acid.
9. The method according to claim 8, wherein glycerol and/or acrylic acid formation is prevented using an antioxidant.
10. The method according to claim 9, wherein said antioxidant is selected from the group consisting of citric acid, ascorbic acid, caffeic acid, and chlorogenic acid.

11. The method according to claim 8, wherein glycerol and/or acrylic acid formation is blocked by removing metallic ions and/or free radicals from said food product.
12. The method according to claim 11, wherein free radicals are removed from said food product by adsorbing on activated carbon or silica derivatives.
13. The method according to claim 11, wherein metallic ions are removed from said food product by adsorbing on a ion exchange resin.
14. The method according to claim 1, wherein said food product comprises a plant material selected from the group consisting of fruits, vegetables, roots and cereals.
15. The method according to claim 14, wherein said plant material is selected from the group consisting of potato, sweet potato, taro root, wheat, corn, rye, oats, rice, banana, apple, and pineapple.
16. The method according to claim 14, wherein said food product comprises a processed plant material in the form of a flour, a powder, a granule or a flake.
17. The method according to claim 1, wherein said food product consists of potato crisps or dehydrated potato flakes.
18. A method of producing dehydrated potato flakes with reduced acrylamide content that comprises :
 - cleaning, and optionally peeling, potatoes;
 - slicing, and optionally blanching and chilling, said potatoes;
 - cooking potatoes in an amount sufficient to permit ricing;
 - ricing the thus cooked potatoes; and
 - dehydrating and flaking the so obtained wet potato mash,wherein potatoes or sliced potatoes are optionally water transferred and, wherein free amino acids and/or metallic ions and/or free radicals liable to be present in the process waters are eliminated from the transfer, blanching and chilling, or washing

waters, and/or wherein Mg (OH)₂ is added up to 0.01 to 1 % in the transfer, blanching and chilling, or washing waters.

19. A method for producing fried potato crisps with reduced acrylamide content that comprises:

- cleaning, and optionally peeling, potatoes;
- slicing said potatoes;
- blanching and chilling or washing said sliced potatoes;
- air sweeping;
- optionally drying;
- frying and oil draining; and

wherein potatoes or sliced potatoes are optionally water transferred and in which free amino acids and/or metallic ions and/or free radicals liable to be present in the transfer, blanching and chilling, washing waters are eliminated, and/or wherein Mg (OH)₂ is added up to 0.01 to 1 % in the transfer, blanching and chilling, or washing waters.

20. The method according to claim 19, which further comprises, between the blanching and chilling or washing step and the air-sweeping step, a step consisting of dipping the sliced potatoes in a gel containing a plant-derived polymer selected from the group consisting of methylcellulose (MC), hydroxy-propylmethylcellulose (HPMC) and pentosane.

21. The method according to claim 19, wherein activated carbon and/or silica derivatives are dissolved in the frying oil to trap free radicals and/or glycerol.

22. The method according to claim 18, wherein said free amino acids are selected from the group consisting of lysine, histidine, arginine, asparagine, glutamine, and tyrosine.

23. The method according to claim 18, wherein the transfer, blanching and chilling, washing and/or dipping waters are contacted with silica, under conditions sufficient to allow adsorption of free amino acids to said silica.

24. The method according to claim 18, wherein the transfer, blanching and chilling, washing and/or dipping waters are contacted with a ion exchange resin so that free amino acids and/or ions in the blanching waters are retained on said resin.
25. The method according to claim 18, wherein activated carbon and/or silica derivatives are dissolved in the transfer, blanching and chilling, washing and/or dipping waters to trap free radicals.
26. The method according to claim 18, wherein potatoes are blanched and chilled, washed, and/or transferred by soaking in a cold solution containing a salt and/or an antioxidant.
27. A dehydrated potato flake obtainable by a method according to claim 18.
28. A fried potato crisp obtainable by a method according to claim 19.